

CLAIMS

1. A wiring board member for forming a multilayer wiring board, comprising:

an insulation layer having a hole passing through the insulation layer in a thickness direction thereof; and

a conductive layer joined to the insulation layer;

wherein the conductive layer includes:

a via portion occupying the hole in the insulation layer;

a bump portion disposed on one surface of the insulation layer, the bump portion having a substantially quadrangular pyramid shape or a substantially truncated quadrangular pyramid shape with a bottom surface thereof integrally connected to the via portion; and

a wiring part having a certain pattern, the wiring part being disposed on the other surface of the insulation layer, and being integrally connected to the via portion.

2. The wiring board member according to claim 1,
wherein the insulation layer is a resist film.

3. The wiring board member according to claim 1,
wherein the conductive layer is made of copper or copper alloy.

4. A method of manufacturing a wiring board member for forming a multilayer wiring board, comprising:

a step of forming a mask having a certain opening pattern on a surface of a silicon substrate whose main surface is (100) face;

a step of forming a recess of a substantially quadrangular pyramid shape or a substantially truncated quadrangular pyramid shape on a surface of the silicon substrate, by a crystal anisotropy etching of the silicon substrate through the mask with a chemical liquid;

a step of removing the mask from the surface of the

silicon substrate;

a step of forming an insulation layer on the surface of the silicon substrate other than a part where the recess is formed in the silicon substrate;

a step of forming a conductive layer on the surface of the silicon substrate on which the insulation layer have been formed, the conductive layer covering the insulation layer and occupying the recess; and

a step of separating the insulation layer and the conductive layer from the silicon substrate to obtain a wiring board member including the insulation layer and the conductive layer.

5. The method of manufacturing a wiring board member according to claim 4, further comprising, between the step of removing the mask and the step of forming the insulation layer, a step of forming a separation layer on the surface of the silicon substrate for facilitating separation of the insulation layer and the conductive layer from the silicon substrate.

6. The method of manufacturing a wiring board member according to claim 5,

wherein the step of separating the insulation layer and the conductive layer from the silicon substrate is conducted by dissolving the separation layer by a process liquid.

7. The method of manufacturing a wiring board member according to claim 4, further comprising a step of forming a certain wiring pattern in the conductive layer.

8. The method of manufacturing a wiring board member according to claim 4,

wherein the mask is formed of a metal film.

9. The method of manufacturing a wiring board member according to claim 4,

wherein the mask is formed of a silicon oxide film.

10. The method of manufacturing a wiring board member according to claim 4,

wherein the chemical liquid is selected from the group consisting of a potassium hydroxide solution, an ethylenediamine · pyrocatechol solution, and a tetramethyl ammonium hydroxide solution.

11. The method of manufacturing a wiring board member according to claim 4,

wherein the insulation film is a resist film.

12. The method of manufacturing a wiring board member according to claim 4,

wherein the step of forming the conductive layer is conducted by a plating with copper or copper alloy.

13. A multilayer wiring board formed with the use of a wiring board member,

wherein the wiring board member comprising:

an insulation layer having a hole passing through the insulation layer in a thickness direction thereof; and

a conductive layer joined to the insulation layer;

wherein the conductive layer includes:

a via portion occupying the hole in the insulation layer;

a bump portion disposed on one surface of the insulation layer, the bump portion having a substantially quadrangular pyramid shape or a substantially truncated quadrangular pyramid shape with a bottom surface thereof integrally connected to the via portion; and

a wiring part having a certain pattern, the wiring part being disposed on the other surface of the insulation layer, and being integrally connected to the via portion.

14. The multilayer wiring board according to claim 13,

comprising a layered body including the plurality of wiring board members that differ from each other in a position of the hole or the pattern of the wiring part, the wiring board members being stacked on each other and unified together.

15. The multilayer wiring board according to claim 13 comprising a layered body including:

the wiring board member; and

a wiring sheet having a flat insulation film and a wiring pattern formed on the insulation film;

the wiring board member and the wiring sheet being stacked on each other and unified together.